

METHOD AND APPARATUS FOR OPERATING A GAMING DEVICE

CROSS-REFERENCE TO RELATED APPLICATION

This application is related to and claims the benefit of U.S. Provisional Application Serial No. 60/228,471, filed August 29, 2000, entitled "Method of Playing a Slot Machine (Dual Slots)".

FIELD OF TECHNOLOGY

This invention relates primarily to electronic video gaming devices, and more particularly to electronic video slot machines which can operate two or more slot games at the same time on the same gaming device.

BACKGROUND OF THE INVENTION

In a conventional slot machine, a single game is offered to the player. To play the game, a player deposits money in the form of coins, gaming tokens or paper currency either into a coin head or bill acceptor ("the coin-in"). The coins and gaming tokens are collected in a reservoir inside the gaming machine ("the hopper") while the paper currency is collected in the bill acceptor inside the gaming machine. If the coins, gaming tokens or paper currency are validated as authentic, the player accrues the appropriate number of playing units ("credits") on a credit

meter on the gaming machine depending on the denomination of the wager as set on the gaming machine. For example, a twenty-five cent gaming machine will accrue four credits for each dollar deposited into the gaming machine by way of the coin head or the bill acceptor.

6 After accruing credits on the credit meter, the player
7 determines how many credits he wishes to wager on the next
8 spin of the slot reels ("total bet") and then spins the
9 reels by pressing the spin button or by pulling a handle.
10 When the reels stop spinning, symbols are displayed on each
11 of the slot reels. The player collects credits for
12 predetermined winning symbol combinations that appear in
13 specific locations ("pay lines") on the slot reels.
14 Winning combinations typically require that three or more
15 of the same symbols appear adjacent to each other reading
16 from the leftmost position of a pay line to the right.

17 Credits are awarded to the player for each winning
18 symbol combination based on a predetermined schedule ("pay
19 table"). The number of credits indicated by the pay table
20 is multiplied by the number of credits wagered on the
21 winning pay line. For example, a player may wager two
22 credits each on five pay lines, spin the reels, and collect
23 twice the amount indicated on the pay table for a winning
24 symbol combination appearing on a pay line.

1 Following any pays, the credits won are added to the
2 player's balance of credits shown in the credit meter. As
3 long as the player has credits on the credit meter, the
4 player may continue to play the gaming machine or the
5 player may collect the remaining balance of credits by
6 pressing a Cash Out button the gaming machine. In
7 addition, the player may view the rules of the game by
8 pressing the Help button before any spin.

9 Every casino seeks to maximize revenues from its
10 gaming devices. One criteria used by casinos is to measure
11 the amount of the coin-in per square foot of casino floor
12 space. Thus, a casino can increase its revenues by
13 increasing the amount of coin-in per square foot. Based on
14 the mathematical probabilities built into each gaming
15 machine, the casino makes on average a percentage of each
16 coin deposited in the machine: the more coin-in, the more
17 revenue. The amount of coin-in, therefore, can be
18 maximized in two main ways:

19 • First, increase the number of machines per
20 square foot. With each generation of new slot
21 machine, the machine carcass and footprint
22 grows smaller. However, since the conventional
23 slot machine is restricted by the size of the
24 physical reels ("mechanical reels"), cathode

1 ray tube ("video reels"), or liquid crystal
2 displays ("LCD reels"), the reduction of the
3 overall size and depth of the slot machine is
4 limited.

5 • Second, increase the maximum total bet allowed
6 on each spin. With each new slot machine game,
7 the maximum bet which the player is allowed to
8 make grows larger. Since the conventional slot
9 player is not likely to wager his entire
10 bankroll on a single spin of the reels,
11 however, the maximum total bet per spin is
12 limited.

13 In addition to these two primary methods of increasing
14 revenue, coin-in may also be enhanced by increasing the
15 speed of play. For example, all other things being equal,
16 a game on a slot machine which takes six seconds to play
17 will result in more coin-in than a game on a slot machine
18 which takes eight seconds to play.

19 The speed of the play of each game becomes even more
20 noticeable when the situation of one player operating two
21 separate slot machines is considered. When a player wishes
22 to play two slot machine games at the same time, the player
23 must insert money into two coin slots or bill acceptors -
24 one on each slot machine. The player must monitor the

1 outcome of the spinning of the reels on two separate
2 display screens - one on each slot machine. The player
3 must also reach back and forth between the two slot
4 machines to control the bet, spin and cash out buttons on
5 each of the slot machines. Managing more than one machine
6 to play multiple games at the same time, therefore, results
7 in a much slower average speed of play. Furthermore, the
8 physical effort involved in managing multiple machines
9 decreases the player's overall enjoyment of playing the
10 games.

11 With the foregoing problems in mind, it is an object
12 of the present invention to provide a slot machine which
13 requires reduced installation space and which will generate
14 a higher total wager to increase revenues per square foot
15 of casino floor space, while at the same time increasing
16 average speed of play and enhancing the player's enjoyment
17 of playing multiple games at the same time.

18 SUMMARY OF THE INVENTION

19 The present invention includes a variety of methods of
20 play that can be programmed on an electronic video slot
21 machine. Each electronic video slot machine is programmed
22 to operate two or more slot games at the same time. In a
23 preferred embodiment of the present invention, the machine

1 displays two slot games on the same video display screen.
2 Each of the slot games may be identical in every respect,
3 including but not limited to the wagering options, the
4 symbol sets used on the reels, the graphics of the screen
5 design, the sounds used during the operation of the slot
6 game and the bonus features. Alternatively, the method of
7 the present invention may use different games, such as two
8 different slot games with different symbol sets, graphics,
9 sounds and bonus features; or two different types of games,
10 such as two video poker games or even a slot game with a
11 video poker game.

12 Each slot game shares a common pool of credits. All
13 wagers for each game are deducted from the common pool of
14 credits and all awards earned from each game are accrued
15 into the same common pool of credits and shown on the
16 common credit meter (e.g., the winnings of one game may be
17 used to pay for the wagers of the other game). In a
18 preferred embodiment of the present invention, the machine
19 contains only one common pool of credits. Alternatively,
20 any number of common pools of credits may be used, such as
21 two common pools of credits used by four players playing
22 the machine in two-person teams.

23 Each slot game plays independently of the other. A
24 wager made on one slot game has no effect on the wager made

1 on the other slot game; the play pattern or the play
2 strategy employed by a player on one slot game has no
3 effect on the play pattern or play strategy of the other
4 slot game; and the outcome of one slot game does not affect
5 the outcome of the other slot game. In a preferred
6 embodiment of the present invention, the slot games are
7 played independently as described above. Alternatively,
8 the games may interact through common bonus features, such
9 as a bonus game which may be activated by the outcomes
10 achieved during the play of either slot game.

11 BRIEF DESCRIPTION OF THE DRAWINGS

12 Figure 1 shows a perspective view of a gaming machine
13 of the present invention.

14 Figure 2 shows a front view of the gaming machine of
15 the present invention.

16 Figure 3 shows a front view of the screen display
17 portion of the gaming machine of the present invention with
18 a first representative game outcome.

19 Figure 4 shows a front view of the screen display
20 portion of the gaming machine of the present invention with
21 a second representative game outcome.

22 Figure 5 shows a front view of the screen display
23 portion of the gaming machine of the present invention with

1 a third representative game outcome.

2 Figure 6 shows a front view of the screen display
3 portion of the gaming machine of the present invention with
4 a fourth representative game outcome.

5 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

6 The preferred embodiment of present invention includes
7 the play of base games and additional bonus features,
8 including Wild symbols and Scatter pays.

9 **Base Games.** To play the base games, the player
10 establishes a common pool of credits, plays one or more
11 base games by choosing which games to play, selecting pay
12 lines, setting the wager per pay line, spinning the reels,
13 and collecting credits for winning symbol combinations and
14 bonus features.

15 Gaming Apparatus. In a preferred embodiment of the
16 present invention, two slot games are displayed side by
17 side on the single video display in the gaming machine.
18 However, any other orientation of the slot games could be
19 used, such as one of the slot game being displayed above
20 the other slot game on the same video display device. In
21 addition, two or more slot games may be displayed
22 simultaneously on one or more video displays.

23

1 Figures 1 and 2 show a representative gaming machine
2 10 that is configured to practice the present invention.
3 The gaming machine 10 includes a video screen display 20 in
4 any suitable location such as in the general center area of
5 the gaming machine 10. Belly glass 48 and top glass 49 can
6 be provided upon which can be printed or otherwise marked
7 information about the game. The gaming machine 10 also
8 includes a button panel 50 which provides the mounting area
9 for a plurality of buttons used by the player to operate
10 the gaming machine. The button panel 50 also can provide
11 space for a coin head 80 into which the player deposits
12 coins or gaming tokens to make a wager or to accrued
13 credits on a credit meter. A bill acceptor 82 is also
14 provided in any suitable location into which the player can
15 insert paper currency or coupons which are also used to
16 make wagers or to accrued credits on the credit meter. A
17 coin tray 84 is also provided as is conventional into which
18 coins are dispensed from a coin hopper (not shown) when a
19 player wishes to cash out.

On the interior of the gaming machine 10 are the computer controls that operate the gaming machine as well as the other conventional hardware used in a gaming machine such as the coin hopper, the video monitor hardware, the wiring harness, the coin validator, the bill acceptor

1 equipment and other suitable devices used to make the
2 gaming machine 10 operational.

3 The layout of the gaming machine 10 shown in Figures 1
4 and 2 is only representative of one suitable layout and
5 other layouts may be used as desired.

6 Video Display. In a preferred embodiment of the
7 present invention, each of the slot games would have a five
8 reel display using a five column by three row matrix.
9 Alternatively, the games could utilize any number of
10 columns and reels, such as a 3 column by 3 row matrix. As
11 shown in Figures 1 and 2, the left slot game 22 and the
12 right slot game 24 are positioned side by side, although
13 any other suitable orientation may be used.

Buttons. In the preferred embodiment of the present invention, a set of buttons are mounted on the button panel 50 and are used by the player to control the functions of each slot game -- the left slot game 22 and the right slot game 24. As shown in Figure 2, these buttons include Select Pay Lines 24L and 24R, Bet Per Line 26L and 26R, Max Bet 28L and 28R, Spin Reels 30L and 306R, Pay Table 24L and 24R, and Help 32L and 32R. Each button may be further identified on the top of each button with "LEFT" and "RIGHT" titles, such as Spin LEFT Reels and Spin RIGHT Reels. Any or all of these control buttons may be

1 displayed on the video display and/or buttons hard wired to
2 the gaming device. If necessary, any number of buttons may
3 added to further facilitate control of the games

4 The preferred embodiment of the present invention can
5 also use a set of control buttons to operate both games at
6 the same time, such as Spin BOTH Reels button 40 that spins
7 the reels of both slot games and Cash Out button 42 that
8 issues the number of credits displayed on the Credits meter
9 60 in coin, or other currency, to the player.

10 Meters. In the preferred embodiment of the present
11 invention, a set of meters are shown on the video display
12 screen 20 to display the salient information for each of
13 the left game 22 and the right game 24, including Number of
14 Pay Lines 52L and 52R, Amount Bet Per Line 54L and 54R,
15 Total Bet 56L and 56R, and Paid 56L and 56R. The Number of
16 Pay Lines meter 52L and 52R is associated with the Select
17 Pay Lines button 24L and 24R and displays the current
18 number of Pay Lines Selected. The Amount Bet Per Line
19 meter 54L and 54R is associated with the Bet Per Line
20 button 26L and 26R and displays the number of credits
21 wagered per pay line. The Total Bet meter 56L and 56R
22 displays the cumulative value of the Number of Pay Lines
23 52L and 52R and Amount Bet Per Line 54L and 54R; and the
24 Paid meter 56L and 56R displays the number of credits won

1 on the last spin. In addition, the games both share the
2 Credits meter 60 which displays the total number credits
3 remaining in the common credit pool.

4 *Credit Pool.* In a preferred embodiment of the present
5 invention, the player deposits coins, tokens or paper
6 currency into the coin head slot 80 or a paper currency
7 bill acceptor 82 to establish a common pool of credits.
8 The amount of this common pool of credits is displayed to
9 the player on the Credits meter 60. The common pool of
10 credits increases and decreases according to the player's
11 wins or losses and may be supplemented, if necessary, by
12 the player by additional deposits of coins, tokens or paper
13 currency.

14 *Choose Games.* In a preferred embodiment of the
15 present invention, a single player may choose to play up to
16 two base games at the same time on the same gaming machine.
17 Alternatively, two players may share the machine with one
18 player operating each game. Alternatively, the player may
19 play one slot game and allow the other slot game to remain
20 inactive.

21 *Select Pay Lines.* In a preferred embodiment of the
22 present invention, each of the slot games have a plurality
23 of pay lines upon which to wager. The pay lines wagered on
24 by the player would be activated a predetermined order.

1 For example, the slot game may utilize nine pay lines of
2 which the player's first wager is applied to pay line 1,
3 the second wager is applied to pay line 2, the third wager
4 is applied to pay line 3, and so on up until the ninth
5 wager is applied to pay line 9. However, the games may
6 utilize any other order of pay line activation and fewer or
7 greater than nine pay lines may be used.

8 *Bet Per Line.* In a preferred embodiment of the
9 present invention, the player sets the value of the wager
10 on each pay line; the same amount is wagered on each pay
11 line. Alternatively, the player could be allowed to make
12 wagers of different amounts on each pay line. The total
13 amount wagered is determined by summing the amounts wagered
14 on each pay line.

15 *Spin Reels.* In a preferred embodiment of the present
16 invention, the player then causes the slot machine to
17 operate by effecting a "spin" of the reels. This can be
18 done in any suitable manner, such as the player pressing a
19 "spin" button on the machine's button panel and watching a
20 video simulation of a reel slot machine.

21 *Symbol Set.* In a preferred embodiment of the present
22 invention, each symbol is chosen from a set of twelve
23 symbols. For each spin, the machine randomly displays
24 three symbols from the symbol set on each reel. A common

1 theme can be used for the symbols, and in one embodiment,
 2 the symbols are related to a fishing theme. However, any
 3 suitable symbols may be used, including the traditional
 4 fruit symbols that commonly appear on other slot machines.
 5 Furthermore, fewer or greater than twelve symbols may be
 6 used as a symbol set.

7 *Winning Symbol Combinations.* In a preferred embodiment
 8 of the present invention, the player is paid for
 9 predetermined winning combinations of symbols that appear
 10 on an active pay line. Each winning combination may
 11 involve three or more of the same symbols that appear
 12 adjacent to each other reading from the leftmost position
 13 of a pay line to the right. Each winning combination pays
 14 the amount indicated on the game's pay table times the
 15 amount wagered on that pay line. Furthermore, any
 16 appropriate pay table may be used and each slot game may
 17 use its own pay table. Alternatively, any desired group of
 18 symbols may be designated as winning symbol combinations
 19 and fewer or greater than three symbols could be designated
 20 as winning symbol combinations.

21 *Base Games Example.* Sam Slotsky is standing in front
 22 of a nickel-denomination version of the preferred
 23 embodiment of the present invention. Sam sees two sets of
 24 5-reel slot games side-by-side on the video display; the

1 each selected pay line on the 5 column by 3 row
2 matrix. For example, the first pay line starts in
3 the middle row of the first column and proceeds in
4 the straight line through the middle row of columns
5 2 through 5;

- 6 • The left game's Amount Bet Per Line meter 54L reads
7 1. Sam presses the Bet Per Line button 26L two
8 times and the Amount Bet Per Line meter 54L counts
9 up from 1 to 3;

- 10 • The Total Bet meter 56L started at 1, but after
11 Sam's adjustments it now reads 15; and

- 12 • The Paid meter 58L reads 0.

13 Sam's adjustments to the left game 22 have not
14 affected the right game 24 at all. So, Sam uses the
15 control buttons under the right game 24 to select his wager
16 for the right game 24:

- 17 • The Number of Pay Lines meter 52R at 9;
- 18 • The Amount Bet Per Line meter 54R at 2;
- 19 • The Total Bet meter 56R at 18; and
- 20 • The Paid meter 58R reads 0.

21 After setting his wagers, Sam presses the Spin Reels
22 button 30L under the left game 22. The Credits meter 60
23 counts down from 400 to 385. The reels of the left game 22

1	4	1	2	7	5
2	5	4	1	3	8
3	6	6	4	9	7

4 (Winning symbol combination in **bold**.)

5 The right game awards Sam 120 credits for a winning
 6 symbol combination of **4-4-4** on pay line 4. The award
 7 reflects the right game 24 pay table which states that **4-4-**
 8 **4** pays sixty credits for each credit wagered upon the pay
 9 line; or sixty credits times two credits wagered by Sam on
 10 pay line 1. The Credits meter 60 counts up from 457 to 577
 11 and the right game's Paid meter 58R reads 120.

12 Again, Sam presses the Spin Reels button 30R under the
 13 right game. The Credits meter 60 counts down from 577 to
 14 562. The reels of the right game 24 spin and, before the
 15 reels stop, Sam presses the Spin Reels button 30L under the
 16 left game 22. The Credits meter 60 counts down from 562 to
 17 544. When the reels of the right game 24 stop, there are
 18 no winning symbol combinations and the right game Paid
 19 meter 58R reads 0. And when the reels of the left game 22
 20 stop, there are two winning combinations which pay a
 21 combined 150 credits. The Credits meter 60 counts up from
 22 562 to 712 and the left game Paid meter 58L reads 150.

23 Sam continues to play the slot games by pressing the
 24 Spin Both button 40. The Credits meter 60 counts down from

1 712 to 679. The reels of the right game 24 and the left
2 game 22 spin and come to a stop as shown in Figure 4.
3 Using the numbers 1 to 12 to represent the symbol set, with
4 10 as the Wild symbol and 11 and 12 as the scatter symbols,
5 the reels of the left game 22 display the following
6 symbols:

7	2	2	2	2	2
8	5	4	1	4	9
9	7	1	3	9	7

10 (Winning symbol combination in **bold**.)

11 And the reels of the right game 24 display the
12 following symbols:

13	2	1	5	8	3
14	5	4	6	4	4
15	3	2	3	6	2

16
17 The left game 22 awards Sam 750 credits for a winning
18 symbol combination of **2-2-2-2-2** on pay line 2. The award
19 reflects the right game's pay table which states that **2-2-**
20 **2-2-2** pays two hundred fifty credits for each credit
21 wagered upon the pay line; or two hundred fifty credits
22 times three credits wagered by Sam on pay line 2. The
23 Credits meter 60 counts up from 679 to 1,429 and the left
24 game Paid meter 58L reads 750. The right game 24 did not

1 produce a winning symbol combination and the right game
2 Paid meter 58R reads 0.

3 Content with his winnings, Sam presses the Cash Out
4 button 42. The gaming device issues 1,429 nickels or any
5 other form of currency, including cash, an EZ-PAY™ ticket,
6 or electronic payment.

7

8 **Bonus Features.** During play of the base games, the player
9 may receive special pays for bonus features, such as Wild
10 Symbols and Scatter pays.

11 *Wild Symbols.* Wild symbols replace any or all other
12 symbols in determining winning outcomes. Alternatively,
13 wild symbols may only replace limited subsets of the other
14 symbols. Wild symbols, therefore, increase the possibility
15 of a player achieving winning combinations and the pay
16 table must reflect that the wild symbols are in use. In a
17 preferred embodiment of the present invention, the wild
18 symbol acts as its own symbol (e.g., three wild symbols on
19 a pay line) while at the same time a wild symbol could also
20 replaces every other symbol. Alternatively, any suitable
21 replacement rules for wild symbols could be used.

22 Each wild symbol may also be used to affect payouts
23 which utilize one or more wild symbols. For example, a
24 wild symbol used in a winning combination of symbols, may

1 double the value of the winning combination. The slot game
2 can also be configured so that the wild symbols increase or
3 decrease the value of any payout in any manner which
4 results in an average value that can be utilized to control
5 the gaming machine's overall average payouts. In the
6 preferred embodiment of the present invention, however, the
7 Wild symbols do not affect the value of the winning symbol
8 combinations.

9 Scatter Pays. A scatter pay awards the player a
10 predetermined payout for the appearance of a scatter
11 symbol, or a combination of scatter symbols, anywhere on
12 the main game screen display. This is known in the art as
13 a "Scatter Pay" in that the scatter symbols may appear
14 anywhere on an active pay line (i.e. a pay line upon which
15 the player has made a wager), across multiple active pay
16 lines, or even on a position upon which the player did not
17 make a wager. Scatter pays award a specific number of
18 credits and/or trigger a bonus feature, such as
19 entertaining animations, free spins, enhanced pay table
20 values, and/or selection of bonus objects.

21 In a preferred embodiment of the present invention, a
22 scatter symbol combination of three or more scatter symbols
23 award: a specific number of credits with an entertaining
24 animation bonus feature; a selection of bonus objects

1 and/or free spins. The number of credits awarded may be
2 determined by multiplying the total amount wagered by a
3 random number within a predetermined range of numbers; or
4 the number of free spins awarded may be set by the number
5 of scatter symbols displayed on the reels. Alternatively,
6 the value of the bonus feature could be determined by any
7 other suitable calculation as long as the bonus feature
8 results in an average value that can be utilized to control
9 the overall average payouts of the slot game.

10 Wild symbols and Scatter pays do not necessarily
11 result in the award of credits. The activation of the
12 bonus feature may only result in a payout some percentage
13 of the time. For example, Wild symbols may appear on the
14 screen without forming a winning symbol combination.
15 Scatter symbols may require the presence of another
16 element, such as another special symbol. Alternatively, a
17 bonus feature which pays more or less frequently could be
18 used as long as the bonus feature results in an average
19 value that can be utilized to control the overall average
20 payouts of the slot game. In the preferred embodiment of
21 present invention, Wild symbols do not always result in
22 winning symbol combinations, however, Scatter pays always
23 result in the award of credits.

24

1 on the left game 22 and the right game 24. For the left
2 game 22, he sets the Number of Pay Lines 52L at 5 and the
3 Amount Bet Per Line 54L at 3; and, for the right game 24,
4 he sets the Number of Pay Lines 52R at 9 and the Amount Bet
5 Per Line 54R at 2.

After setting his wagers, Sam presses the Spin Reels button 30L under the left game 22. The Credits meter 60 counts down from 400 to 385. The reels of the left game 22 spin and then come to a stop. Using the numbers 1 to 12 to represent the symbol set, with 10 as the Wild symbol and 11 and 12 as the scatter symbols, the reels of the left game 22 display the following symbols as shown in Figure 5:

13	11	1	6	7	5
14	4	10	4	3	8
15	6	6	2	11	7

16 (Winning symbol combination in **bold**.)

17 The left game 22 awards Sam 290 credits for two
18 winning symbol combinations of **4-10-4** on pay line 1 and **6-**
19 **10-6** on pay line 5. The **10** symbol is Wild and acts as a **4**
20 symbol to make the **4-4-4** combination and then acts as a **6**
21 symbol to make the **6-6-6** combination. The **10** symbol does
22 not replace as a Scatter symbols and, therefore, does not
23 act as an **11** symbol.

1 Content with his winnings, Sam presses the Cash Out
2 button 42. The gaming device issues 1,217 nickels or any
3 other form of currency, including cash, an EZ-PAY™ ticket,
4 or electronic payment.

5 The present invention is not constrained to parameters
6 listed above. The number of games operated by the machine
7 at the same time is not critical; more than two games can
8 be used. The number of pay lines used in each game is also
9 not critical; more or less than five pay lines can be used.
10 The number of symbols located on each pay line may be more
11 or less than the three symbol locations described above.
12 However, it is preferable to have at least three symbol
13 locations to provide mathematical combinations in
14 sufficient amounts to offer reasonable winning payouts.
15 Also the number of symbols with the symbol set used in a
16 slot game may vary. However, it is preferable to have at
17 least seven symbols within the symbol set to provide
18 mathematical combinations in sufficient amounts to offer
19 reasonable winning payouts.

20 In addition, the present invention may be modified to
21 work on multiple video displays or sets of mechanical slot
22 reels with a base game on each display or set of reels.
23 Existing slot machines with multiple games use multiple
24 reel mechanisms that are dependent and, therefore, do not

1 allow for separate operation. The present invention,
2 however, uses video displays and allows each base game to
3 operate independently using separate controls, pay tables,
4 wagers, symbols sets, base game rules, bonus features and
5 animations. Furthermore, the base games may be played one-
6 at-a-time, in an alternating fashion, or simultaneously.

7 Given the flexibility of the present invention,
8 therefore, the preferred embodiment listed above should be
9 considered illustrative and not limiting. Various
10 modifications and additions may be made and will be
11 apparent to those skilled in the art. Accordingly, the
12 invention should not be limited by the foregoing
13 description, but rather should be defined by the following
14 claims.